

The Changing Gender Composition of U.S. Medical School Applicants and Matriculants

Between the mid-1970s and the early 2000s, the number and proportion of females among U.S. LCME-accredited medical school applicants increased, growing from less than 25 percent to just over 50 percent of the applicant pool. Given that trend, it was estimated that female applicants would increasingly outnumber males.¹ While medicine remains an attractive career choice for both females and males and the total number of female and male applicants continued to grow through 2007, the percentage of females applying to medical school peaked in 2003 and has since been declining. With an aim to keep abreast of these issues, this *Analysis In Brief* (AIB) examines: (1) the recent patterns in number and percentage of female applicants to medical school by first-time, repeat, and total applicants; (2) the patterns in medical school matriculation; and (3) whether the undergraduate pipeline is the source of declines in the percentage of female applicants.

Methodology

For this AIB, we present descriptive

statistics on medical school applicant and matriculant data gathered from the American Medical College Application Service (AMCAS). We examined the number and percentage of male and female applicants from academic years 1975 to 2011. We also examined the female applicant pool by self-reported race and ethnicity. Lastly, we compared medical school applicant trends with the number of male and female bachelor's degrees conferred each year, by using data from the Department of Education's Integrated Postsecondary Education Data System (IPEDS) and the National Science Foundation (NSF).

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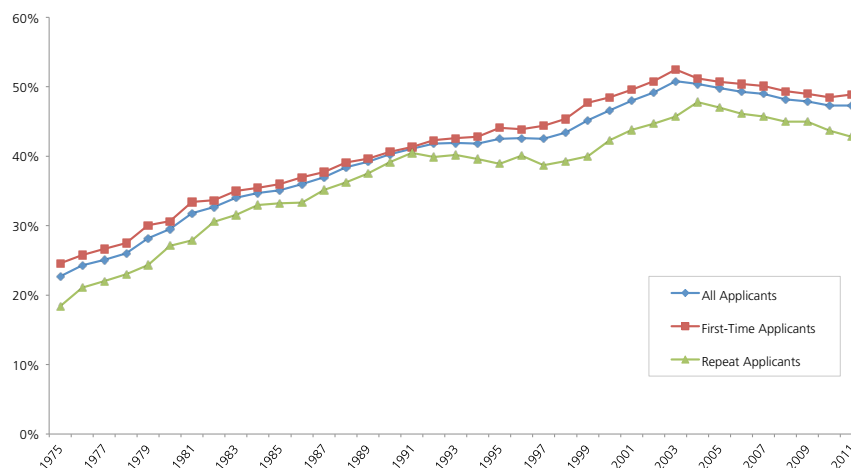
Females as a percentage of all medical school applicants show declines: In 1975, females represented only 22.7 percent of all applicants to medical school (Figure 1). By 2003, females reached 50.8 percent of the applicant pool. Since then, the percentage of all female applicants to medical school has been declining

slightly. In 2011, females represented 47.3 percent of all medical school applicants. This same pattern holds for first-time and repeat applicants.²

In addition to the percentage decrease of all female applicants from the period of 2003 to 2010, the actual number of all female applicants to medical school also fell between 2007 and 2010. During these recent years, the number of female applicants declined 2.5 percent (from 20,735 to 20,207), while the number of male applicants increased 4.4 percent during the same period (from 21,580 to 22,533). In the past year (from 2010 to 2011) the percentage of females among total applicants remained steady and the number of female applicants increased slightly. The declining percentage of female applicants is also generally consistent across all racial and ethnic groups.

Females as a percentage of medical school matriculants show declines: Not only did the percentage of female applicants decline, but the percentage of female matriculants declined as well. The proportion of female medical school matriculants reached a high of 49.6 percent in 2003 (which was also the height of the female applicant pool). From 2003 to 2010, the percentage of female matriculants steadily decreased to 46.9. In 2011, females represented 47.0 percent of the matriculating class. Importantly, though, the total number of matriculants has increased 10.8 percent (from 17,361 to 19,230) since 2006, when the AAMC called for a 30 percent increase in medical school enrollment by 2015.³

Figure 1. Percentages of Female Applicants to U.S. Medical Schools, 1975-2011

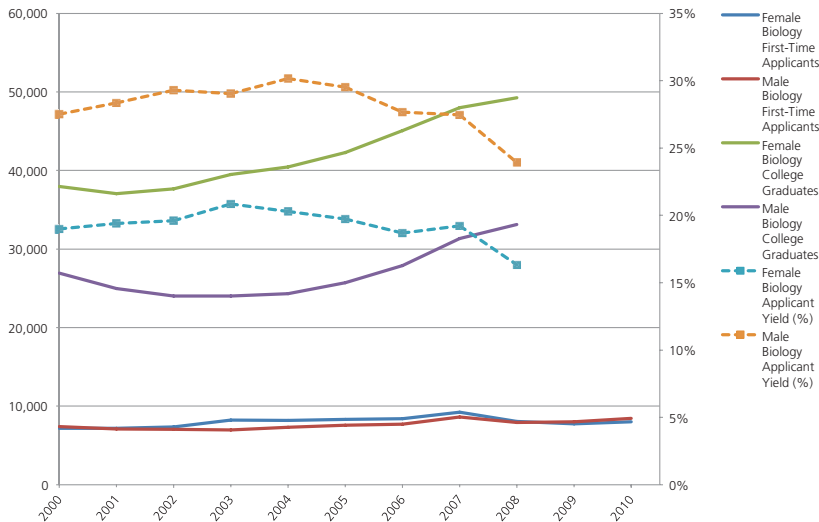


¹ Garrison, G. and Matthew D. Future Medical School Applicants, Part II: Gender Diversity. AAMC Analysis in Brief 7:4 (June 2007).

² For numbers see www.aamc.org/facts, Table 7.

³ Association of American Medical Colleges. 2006. AAMC Calls for 30 Percent Increase in Medical School Enrollment [Press Release]. Retrieved from <https://www.aamc.org/newsroom/newsreleases/2006/82904/060619.html>

Figure 2. Number of U.S. Medical School First-Time Applicants with Primary Major in Biological Sciences, by Sex, 2000-2010; Number of U.S. Bachelor's Degrees in Biological Sciences, by Sex, 2000-2008; and Biological Sciences Applicant Yield* by Sex, 2000-2008



* Applicant yield represents the percentage of all biology graduates who became first-time medical school applicants.

Trends among undergraduates do not explain the declining percentages of female applicants and matriculants to medical school: Can the declining percentage of female medical school applicants and matriculants be explained by a parallel declining percentage of female undergraduates? In contrast to females in medical school, females continue to outnumber males in the percentage of bachelor's degrees conferred each year. In 1997, 56.1 percent of all bachelor's degrees were awarded to females; this figure rose to 57.5 percent in 2002, and held steady at 57.3 percent in 2007.⁴ When examining only science and engineering fields,

females have outnumbered males since the year 2000. In 2008, 50.3 percent of all science and engineering bachelor's degrees were awarded to females.⁵ Focusing on the biological sciences, which is the major pathway to medicine, females represented 58.5 percent of bachelor's degrees conferred in 2000, 62.4 percent in 2004, and 59.8 percent in 2008.⁴ This trend mirrors that for female first-time medical school applicants, where the percentages were 48.5, 51.2, and 49.4 respectively.

Despite the decrease in percentage of females earning biological sciences degrees in recent years, the actual number of females (and males) earning a bachelor's degree in biology has continued to rise (Figure 2). This pattern means that the ratio of all biology graduates who become first-time medical school applicants gradually declined for both females and males between 2004 and 2010 (from 0.20 to 0.16 for females and from 0.30 to 0.24 for males).⁶ Although biology graduates are increasing in numbers, a decreasing proportion of them appear to be applying to medical school. One consideration is that the decline in the percentage of biology graduates applying to medical school may also reflect a more diverse educational background (i.e., bachelor's degrees in other fields) of medical school applicants.

Discussion

It is important to keep abreast of these findings because the recent decline in percentage of female applicants to medical school across all racial and ethnic groups could potentially impact educational diversity as well as the physician workforce. The latter impact will occur if female M.D.s continue to work fewer hours than their male counterparts and choose primary care specialties more often than men, as previous research suggests.^{7,8} These findings, which also show that females outnumber males in bachelor's degrees awarded (including in biology and other science fields), implies that there might be other factors that could be dissuading females from applying or re-applying to medical school.

Further investigation is needed to 1) identify potential medical school-level attractors and detractors of females to the M.D. degree pathway; 2) identify health care sector attractors and detractors of females into the M.D. pathways such as long work hours; 3) determine whether females are now more likely to pursue other health professions over an M.D. degree and what attracts them to these alternatives; and 4) identify medical school programs that have maintained strong female participation to identify promising practices. These investigations could help develop programs and pathways more conducive to diversity and gender balance in academic medicine.

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⁴ U.S. Department of Education, National Center for Education Statistics, 1997–98, 2002–03, and 2007–08 Integrated Postsecondary Education Data System (IPEDS), “Completions Survey” (IPEDS-C:98) and Fall 2003 and 2008.

⁵ National Science Foundation, Division of Science Resources Statistics, special tabulations of U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, Completions Survey, 2000–07.

⁶ Information on applicants' undergraduate major for the year 2011 was not available at the time of completing this Analysis in Brief.

⁷ Staiger DO, Auerbach DI, Buerhaus PI. Trends in the Work Hours of Physicians in the United States. *JAMA*. 2010;303(8):747-753.

⁸ Dill MJ and Salsberg ES. The Complexities of Physician Supply and Demand: Projections Through 2025. Center for Workforce Studies, Association of American Medical Colleges; 2008.